Biennial Review Request for Comments From DEQ (revised 8-28-12)

"The State Department of Agriculture and the State Board of Agriculture shall consult with the Department of Environmental Quality or the Environmental Quality Commission in the adoption and review of water quality management plans and in the adoption of rules to implement the plans." ORS 568.930(2)

Survey Checklist for: Coos-Coquille Agricultural Water Quality Management Area
DEQ Basin Coordinator: Pam Blake
Date: May 28, 2014
(If answered "no", please provide information and/or example language)

I. Area Plan Content

A. Issue identification

1. Does the Area Plan include all water quality limited water bodies, including 303(d) listed and with approved TMDLs?

Appendix I & Chapter 2.4

DEQ Comment: No. Updated tables are provided at the end of this document.

The following language is suggested for addition to section 2.4.4 for the parameter biological criteria.

Biological Criteria

Freshwater macroinvertebrates include insects, crustaceans, snails, clams, worms, mites, etc. DEQ identifies sites in a given region that are least disturbed by anthropogenic activities and uses these as reference sites. Biological assessment tools use information from these reference sites to predict the variety and number of aquatic life species expected in Oregon streams and to make inferences about the biological condition of the waters.

Detrimental changes in resident biological communities are a form of pollution. Biological community assessments can be used as an indicator for aquatic life beneficial use support. Numeric benchmarks have been developed to evaluate the integrity of aquatic biological communities. Biological assessments look at conditions in the biological communities, but do not by themselves indicate if changes are related to pollutants, or identify which pollutant should be addressed by point source or other controls through a Total Maximum Daily Load.

DEQ has developed the PREDictive Assessment Tool for ORegon, or PREDATOR, to assess the macroinvertebrate communities in Oregon's perennial, wadeable streams. PREDATOR analyzes data from reference sites grouped into three regions in Oregon and models the expected assemblage. Information from a sampling site can be compared to the macroinvertebrate assemblage predicted by the model and an assessment made about how different the observed assemblage is from the expected or reference assemblage. Data collected at a sampling site is used to

generate a number for the observed versus expected (O/E) macroinvertebrate taxa. This number represents the "missing" taxa at a site, and can be expressed as "% taxa loss".

The complete Biological Criteria Water Quality Standard can be found at OAR 340-041-0011.

Protecting Cold Water criteria - 340-041-0028 (11) should have additional detail added (perhaps on page 40).

Waters of the State that have summer seven-day-average maximum ambient temperatures that are colder than the biologically based numeric criteria may not be warmed by more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the colder water ambient temperature. This provision applies to all sources taken together at the point of maximum impact where salmon, steelhead or bull trout are present. The cold water protection narrative criteria do not apply if: there are no threatened or endangered salmonids currently inhabiting the water body; the water body has not been designated as critical habitat; and the colder water is not necessary to ensure that downstream temperatures achieve and maintain compliance with the applicable temperature criteria.

ODA Response:

2. Does the Area Plan adequately reflect current TMDL status?

Chapter 2.4

DEQ Comment: Yes it does. Schedule language on page 35 was edited to state; The Coquille 4th Field HUC TMDL should be completed in 2015. The Tenmile Watershed TMDL will be updated when the Coos 4th Field TMDL is developed.

ODA Response:

3. Does the Area Plan sufficiently present the TMDL load allocation that it is intended to address?

Chapter 2.4

DEQ Comment: Suggest adding the following language. (This language was also placed section 2.4.3)

Wetlands present at lake tributary interfaces are especially important as a mechanism to filter sediments from upland sources. Attainment of the Tenmile Lakes TMDL sediment load allocations relies heavily of the re-establishment of wetland function in these areas.

In addition, the confinement of flows in these straightened channels exacerbates streambank erosion. Increasing channel connectivity to finger valley floors can help decrease streambank erosion and allow sediments to settle on the valley floors rather than be transported directly to the lakes.

ODA Response:

4. Does the Area Plan adequately include items from applicable Groundwater Management Area Action Plans?

N/A

DEQ Comment:
ODA Response:

5. Does the Area Plan present the requirements of Coastal Zone Management Act applicable to agriculture?

Chapter 1.5.4 (p 19), Appendix E

DEQ Comment: No. Suggest adding the following;

Channelized Streams

- Evaluate the potential effects of proposed channelization and channel modification on the physical and chemical characteristics of surface waters in coastal areas;
- Plan and design channelization and channel modification to reduce undesirable impacts; and
- Develop an operation and maintenance program for existing modified channels that includes identification and implementation of opportunities to improve physical and chemical characteristics of surface waters in those channels.
- Evaluate the potential effects of proposed channelization and channel modification on instream and riparian habitat in coastal areas;
- Plan and design channelization and channel modification to reduce undesirable impacts; and
- Develop an operation and maintenance program with specific timetables for existing modified channels that includes identification of opportunities to restore instream and riparian habitat in those channels.

Eroding Streambanks and Shorelines

- Where streambank or shoreline erosion is a nonpoint source pollution problem, streambanks and shorelines should be stabilized. Vegetative methods are strongly preferred unless structural methods are more cost-effective, considering the severity

of wave and wind erosion, offshore bathymetry, and the potential adverse Impact on other streambanks, shorelines, and offshore areas.
- Protect streambank and shoreline features with the potential to reduce NPS pollution.
- Protect streambanks and shorelines from erosion due to uses of either the shorelands or adjacent surface waters.

Wetlands and Riparian Areas

- Protect from adverse effects wetlands and riparian areas that are serving a significant NPS abatement function and maintain this function while protecting the other existing functions of these wetlands and riparian areas as measured by characteristics such as vegetative composition and cover, hydrology of surface water and ground water, geochemistry of the substrate, and species composition.
- Promote the restoration of the preexisting functions in damaged and destroyed wetlands and riparian systems in areas where the systems will serve a significant NPS pollution abatement function.
- Promote the use of engineered vegetated treatment systems such as constructed wetlands or vegetated filter strips where these systems will serve a significant NPS pollution abatement function.

ODA Response:

6. Does the Area Plan include sufficient items from the State of Oregon; Pesticide Management Plan for Water Quality Protection?

Chapter 1.5.5 (p. 20)

DEQ Comment: Please consider adding this language;

Pesticides

Always apply chemicals in accordance with the label requirements in order to minimize crop damage, build up of chemicals in the soil, potential runoff, and leaching into groundwater. Read the label, and as required by ORS 634.372(2) and (4), follow label recommendations for both restricted use and non-restricted use pesticides. DEQ now requires a permit for pesticide applications in, over, or within three feet of water. This permit provides coverage for pesticide applications to control mosquitoes and other flying insect pests, weeds, algae, nuisance animals, and area-wide pest control (see: www.deq.state.or.us/wq/wqpermit/pesticides.htm).

Calibrate, maintain, and correctly operate application equipment. Spray rigs need to be calibrated each time there is a change in product and/or application rate. Nozzles need to be replaced often, particularly if an abrasive pesticide formulation (such as wettable powders) is used. Sprayers need to be operated in the correct pressure

range (dictated by the material and nozzle combination used), to prevent excess drift to non-target areas (e.g. waters of the state).

Adopt integrated pest management (IPM) strategies. IPM promotes a diverse, multi-faceted approach to pest control. This strategy establishes an economic threshold for control actions, to guide the manager to use a variety of field/orchard sanitation and cultural practices, field scouting, beneficial insects, and other biological controls, and the use of properly selected chemical pesticides. While IPM does not exclude the use of chemical pesticides, it does seek to optimize their use and minimize off-target movement into the environment.

Establish appropriate vegetative buffer strips. Buffer strips will help to retain soil (which may include pesticides) and surface runoff (which may have dissolved pesticides) from making contact with waters of the state.

Store and handle pesticide materials correctly. Storage and handling facilities should be secure and include a leak-proof pad with curbing for mixing and loading. An alternative to a permanent, concrete pad is to always mix pesticides in the field; frequently moving sites prevent chemical buildup. Wash/rinse water should be directly applied to the appropriate crop. Empty liquid pesticide containers should be triple rinsed, then punctured and disposed of in an approved manner. Dry chemical bags should be emptied completely. Bundle and store paper bags until they can be disposed of in an approved manner.

Watch for a pesticide waste collection day in your area. These events allow individuals to safely and anonymously drop off unwanted, unused, or out of date agricultural pesticides, along with some empty containers.

ODA Response:

7. Does the Area Plan sufficiently address the needs in drinking water source areas related to agricultural pollution sources within the geographic area of the plan?

Chapter 1.5.2 (p. 19) No local drinking water source information is currently included in the Plan. I have not received clear direction from ODA on whether or not to include DWSA info.

DEQ Comment: Please consider adding;

Drinking Water

Public drinking water systems present in the Coos-Coquille Management Area are shown in the table below.

Table XX – Surface Water Public Water Systems (PWS)						
Sub-Basin	**Watershed**	**PWS ID**	**PWS Name**	**Drinking Water Source**	**Population**	**System Type**
Coos	Coos Bay Frontal	00205	Coos Bay North Bend Water Board	Pony Creek/Merritt Lake	38,000	C
	Lakeside Frontal	00463	Lakeside Water District	Eel Lake	1,700	C
Coquille	Lower Coquille River	00074	City of Bandon	Ferry Creek	2,990	C
		00074	City of Bandon	Geiger Creek	2,990	C
		00213	City of Coquille	Rink Creek	4,939	C
		00213	City of Coquille	Coquille River	4,939	C
		00214	Garden Valley Water Association	China Creek	80	C
		05581	Weiss Estates Water System	Fahy's Lake	27	C
	North Fork Coquille River	00551	City of Myrtle Point	North Fork Coquille River	2,451	C
	South Fork Coquille River	00672	City of Powers	Bingham Creek	750	C
		00672	City of Powers	South Fork (Coquille River)	750	C
(Unmapped)		05592	Belloni Boys Ranch	Davis Creek	38	NTNC
		90861	Camp Myrtlewood	Unnamed Spring on Vista Mt and Myrtle Creek (seasonal)	75	NC
		94283	Sleepy Hollow RV Park	Middle Fork Coquille River	25	NC
		94557	Coos Co Parks – Laverne	North Fork Coquille River	250	NC
		94558	Coos Co Parks - West Laverne	North Fork Coquille River	35	NC
		95332	Myrtle Tree RV Park	Coquille River	30	NC
		00209	Sumner Water Co-op	Spring (SW)	24	NP
		01340	Upper Coos River Wtr Assoc	Unnamed Creek	24	NP
		05302	Watsonville Water System	Unnamed Creek	18	NP
		05523	Camp Millicoma	Unnamed Spring Fed Creek	15	NP

Table XX – Surface Water Public Water Systems (PWS)						
Sub-Basin	**Watershed**	**PWS ID**	**PWS Name**	**Drinking Water Source**	**Population**	**System Type**
		05643	Bear Creek Apartments	Springs (SW)	14	NP

Note: Table does not include public water systems which purchase drinking water from these water systems.

System Types: Abbreviations and Definitions

C - "Community Water System" means a public water system that has 15 or more service connections used by year-round residents, or that regularly serves 25 or more year-round residents.

NTNC - "Non-Transient Non-Community Water System" means a public water system that is not a Community Water System and that regularly serves at least 25 of the same persons over 6 months per year.

NC - "Transient Non-Community Water System" means a public water system that serves a transient population of 25 or more persons.

NP - "State Regulated Water System" means a public water system, which serves 4 to 14 service connections or serves 10 to 24 people. Monitoring requirements for these systems are the same as those for Transient Non-Community water systems.

Table XX – Groundwater Public Water Systems (PWS)						
Sub-basin	**Watershed**	**County**	**PWS ID**	**PWS name**	**Pop**	**System Type** *See preceding Table notes for description of System Types.*
Coos	Coos Bay	Coos	94041	The Riverside Pub	50	NC
	Coos Bay Frontal		5286	Coos Bay International Speedway	150	NC
			5364	Mt View Terrace Home Park	45	C
			90859	Watson Ranch Golf	30	NC
			569	Ocean Pines RV Park	100	NC
			573	Sandwood Mobile Villa	70	C
			574	Wildwood Estates	90	C
			91011	OPRD Seven Devils Wayside	30	NC
			95028	Hauser Store	50	NC
			575	North Bayside Estates - North	65	C
			1463	North Bayside Estates-South	40	C
			90858	Kentuck Golf Course	200	NC

Table XX – Groundwater Public Water Systems (PWS)						
Sub-basin	**Watershed**	**County**	**PWS ID**	**PWS name**	**Pop**	**System Type** *See preceding Table notes for description of System Types.*
	Lakeside Frontal		94594	Hollywood Tavern	75	NC
			94595	Hauser Bar & Grill	50	NC
		Douglas	94884	USFS Umpqua Beach	100	NC
Coquille	Lower Coquille River	Coos	91014	OPRD Bullards Beach State Park	1,450	NC
		Coos	95063	Bandon Coastal Dunes	350	NTNC
	Middle Fork Coquille River	Douglas	90541	Camas Valley School	180	NTNC
			93946	Camas Mountain Chalet	150	NC
			94779	Market Plus	100	NC
	North Fork Coquille River	Coos	94574	Rick and Barbs Homestead Bar and Grill	25	NC
	South Fork Coquille River		92706	USFS Daphne Grove CG	48	NC
	New River Frontal		94556	Lake Bradley Christian Camp	100	NC
			94632	Oregon Overseas Timber Company	35	NTNC
			94636	Pacific Community Church/School	100	NTNC

Drinking water protection sensitive areas generally include areas with high soil permeability, high soil erosion potential, high runoff potential and areas within 1000' from the river/streams. The sensitive areas are those where the potential contamination sources, if present, have a greater potential to impact the water supply.

Surface water source water assessments are available for the following public surface water sources: Coos Bay North Bend Water Board, Lakeside Water District, Cities of Reedsport, Bandon, Coquille, Myrtle Point, and Powers, and the Garden Valley Water Association. Assessments for the cities of Powers, Myrtle Point, Coquille, and Bandon identify the following agricultural activities that may impact drinking water quality.

- Improper storage and management of animal wastes may adversely impact drinking water supply.
- Concentrated livestock may contribute to erosion and sedimentation of surface water bodies which may adversely impact drinking water supply.
- Over-application or improper handling of pesticides/fertilizers may adversely impact drinking water.
- Some agricultural practices may result in excess sediments discharging to surface waters which may adversely impact drinking water supply.
- Observed stream bank erosion/slide potential appears to be a problem along portions of the Coquille River. Sediments from stream bank erosion may adversely impact drinking water supply.
- Excessive irrigation may transport nurseries, contaminants or sediments to greenhouses) groundwater/surface water through runoff which may adversely impact drinking water supply.
- During major storm events, reservoirs may contribute to prolonged turbidity for downstream intakes for drinking water. Construction, fluctuating water levels, and heavy waterside use can result in increased erosion and turbidity which may adversely impact drinking water supply.

Table XX – Compounds Detected Above Action Levels* for Public Water Systems

Water Type	Analyte Name	PWS ID	PWS Name	Pop	Water shed	Count of Detects	Min of Concentration mg/L	Max of Concentration mg/L	MCL mg/L
SW	Coliform (TCR)	5581	Weiss Estates Water System	27	Lower Coquille R	1	1	1	
GW	Coliform (TCR)	90541	Camas Valley School	180	Middle Fork Coquille R	2	1	1	
GW	Coliform (TCR)	92706	USFS Daphne Grove CG	48	South Fork Coquille R	1	1	1	
SW	Di(2-Ethylhexyl) Phthalate	213	City of Coquille	4,939	Lower Coquille R	1	0.0018	0.0018	
SW	Di(2-Ethylhexyl) Phthalate	672	City of Powers	750	South Fork Coquille R	1	0.0009	0.0009	
SW	Nickel	74	City of Bandon	2,990	Lower Coquille R	3	0.0605	0.0605	0.1
SW	Turbidity	74	City of Bandon	2,990		2	122	615	
SW	Turbidity	213	City of Coquille	4,939		1	13	13	

Table XX – Compounds Detected Above Action Levels* for Public Water Systems									
Water Type	Analyte Name	PWS ID	PWS Name	Pop	Water shed	Count of Detects	Min of Concentration mg/L	Max of Concentration mg/L	MCL mg/L
SW	Xylenes, Total	74	City of Bandon	2,990		1	0.0007	0.0007	
GW	Coliform (TCR)	575	North Bayside Estates - North	65	Coos Bay Frontal	2	1	1	
GW	Coliform (TCR)	1463	North Bayside Estates- South	40		1	1	1	
GW	Coliform (TCR)	5364	Mt View Terrace Home Park	45		6	1	1	
GW	Coliform (TCR)	90859	Watson Ranch Golf	30		1	1	1	
GW	Coliform (TCR)	94595	Hauser Bar & Grill	50	Lakeside Frontal	3	1	1	
GW	e. Coli	575	North Bayside Estates - North	65	Coos Bay Frontal	1	1	1	
GW	Nitrate	90858	Kentuck Golf Course	200		1	7.8	7.8	

ODA Response:

B. Goals and Objectives:

1. Do the goals and objectives of the Area Plan clearly state that the purpose of the Area Plan is to prevent and control water pollution and to meet water quality standards?

1.1 (p. 11), 1.3.1 (p. 13), 3.1 (p. 54)

DEQ Comment: Consider adding;

<u>Goals</u>

- Prevent and control water pollution from agricultural activities and soil erosion and achieve applicable water quality standards.

- Achieve the following land conditions on agricultural lands throughout the management area that contribute to good water quality (LAC and ODA can discuss how to adapt these to the management area):
  - Streamside vegetation provides streambank stability, filtration of overland flow, and moderation of solar heating, consistent with site capability.
  - No visible sediment loss from cropland through precipitation or irrigation induced erosion.
  - No significant bare areas within 50 feet of streams on pasturelands and/or rangelands.
  - Ensure that active gullies (near streams, on pasturelands, and on rangelands) have healed or do not exist where they may contribute waste to waters of the state
  - Livestock manure is stored under cover during the winter and in a location that minimizes risk to surface and groundwater.

Long-term Objectives across the Management Area

- All streamside areas along agricultural lands support site-capable vegetation
- Water from agricultural lands meets water quality standards and load allocations
- Program effectiveness is measured and documented across the Management Area and across each priority area
- Voluntary participation is maximized

Overall Objectives

- Minimize erosion and sediment from agricultural and rural lands
- Manage irrigation and tail water runoff to waters of the state
- Control pollution as close to the source as possible
- Limit livestock access to streams, wetlands, and riparian areas and promote management of animal waste to minimize runoff to waters of the state

ODA Response:

2. Does the Area Plan include clear and measurable objectives that are designed to meet water quality standards and TMDL load allocations?

3.3 (p. 55) MOs are in development stage. I need to work with Coos SWCD staff & LAC. Will have MOs in place after BR. MOs will be included in final version of C-C plan 2014.

DEQ Comment: Please consider these objectives
DEQ recommends minimum of the following objectives with timelines in order to make sure that ODA and LAC are able to track progress toward meeting water quality standards and other water quality goals. DEQ acknowledges the challenges of setting timelines for objectives. DEQ supports adaptive

management, and expects milestones and timelines to be reviewed and adjusted over time.

- 100% compliance with area rules in plan area by a specified time, and maintaining the 100% compliance.
- Measurement of rates of implementation of the area plan and rules (plans should include measurable milestones).
- Adequate level of implementation of area plans (beyond area rules) in order to meet water quality standards and other goals.

Other language to consider

- By the 2014 biennial review, a rough assessment of streamside vegetation conditions along agricultural lands in the entire management area will be complete. This assessment will be completed by the Curry SWCD or ODA. This assessment can be used to track and report progress in streamside vegetation improvements over time and to identify areas to focus work. Assessment results will be considered at the 2014 biennial review and may be used to revise the goals below.
- By the 2016 biennial review, XX% of streamside areas along agricultural lands where the assessment identifies agricultural activities as likely preventing riparian vegetation establishment will be in a condition where agricultural activities no longer prevent streamside vegetation from establishing.
- By 2020, XX% of streamside areas along agricultural lands where the assessment identifies agricultural areas as likely preventing riparian vegetation establishment will be in a condition where agricultural activities no longer prevent streamside vegetation from establishing.
- By 2022, XX% of streamside areas along agricultural lands where the assessment identifies agricultural activities as allowing riparian establishment but not at site capability will have reached site capability.
- By the 2014 biennial review, ODA and the LMA will compile information about the location, number, and size of water quality improvement projects completed in the management area since area plan and rules adoption, as resources and grant program privacy rules allow.
- The LMA will identify areas of concern across the Management Area, where agricultural practices are not allowing streamside vegetation to establish. The LMA will provide one-on-one voluntary technical assistance to landowners to achieve land conditions that contribute to good water quality.
- By the 20XX biennial review (or other appropriate date), areas where visible cropland erosion is occurring will be identified. Goals and timelines will be established to eliminate erosion or have structures in place to capture sediment, and ODA and the LMA will report back to the LAC on the status and conditions in the area at the 20XX biennial review.
- By each of the following seven biennial reviews, the objective described for the first priority area has been completed for the other seven priority areas

- By the 2030 biennial review, across the entire Management Area, all land where agricultural activities prevented streamside vegetation from establishing, and where landowners accept voluntary assistance, allows site-capable vegetation to establish
- By the 2020 biennial review, 25 percent of streamside areas along agricultural lands, where the baseline condition in 2012 showed streamside vegetation not at site capability, will have reached site capability

- Request the Coos SWCD to include the Area Plan in their annual and long-range work plans for administration and outreach associated with biennial reviews and for implementation
- Ensure adequate administration of the Area Plan
- Obtain funding for implementation of conservation planning assistance, conservation education, and water quality monitoring through grants and partnerships with agencies and organizations
- Form partnerships with the agribusiness sector and others for additional funding
- Identify sound agricultural management strategies, which, through widespread adoption, will lead to achievement of water quality standards and load allocations in the Management Area
- Review and/or conduct ongoing research on the effectiveness of conservation measures.
- Obtain practical knowledge from agricultural producers and suppliers
- Provide landowner assistance in planning and implementation from SWCDs, USDA, NRCS and other partner organizations

Educational Objectives

- Conduct education programs to promote public awareness of water quality issues and their solutions
- Develop education programs that promote demonstration projects, to showcase successful conservation and management strategies and systems
- Produce and distribute an SWCD newsletter that includes water quality information
- Develop an ongoing media program to inform agricultural landowners / operators and the public of conservation issues and events
- Create and maintain a list of experienced agricultural landowners / operators willing to share their successes with other interested people by speaking, leading tours, and providing tour sites
- Build partnerships with agribusiness to promote conservation
- Sponsor workshops and tours
- Assist landowners and operators conducting agricultural management or land disturbing activities who chooses to develop and implement a Voluntary Water Quality Farm Plan
- Compile ongoing research results and effective solutions to water quality problems

ODA Response:

C. Strategies to Meet Water Quality Goals and Track Progress
   1. Are geographic and/or water quality issue priorities listed in the Area Plan consistent with TMDL and GWMA priorities?

3.4 (p. 56-60) Chapter 3 in general.

DEQ Comment: In general yes but chapter 3 does include monitoring information and refers to chapter 4 where monitoring reports still need to be added so I will need to look at the completed chapter 4 before I can complete this review.

ODA Response:

   2. Are geographic scales and implementation actions identified in the Area Plan appropriate to track implementation, progress, and effectiveness?

Focus Area (Appendix J), p. 55-56

DEQ Comment: Consider adding;

- Document the number, stream length, acreage, and approximate location of projects that improve water quality – within the priority area and across the Management Area
- Evaluate the effectiveness of outreach and education programs designed to provide public awareness and understanding of water quality issues - for the priority area and across the Management Area
- Evaluate the effectiveness of available technical and financial resources in meeting the goals and objectives of the Area Plan – for the priority area and across the Management Area
- Document prohibited conditions (defined below) and subsequent corrections

Consider adding these to the focus area process that is already in the plan.

The following steps outline the general process for implementing the Area Plan in a priority area and for documenting effectiveness:

- Identify water quality parameter(s) of concern *and a possible land condition surrogate (e.g. temperature - streamside vegetation)*
- Compile and map available baseline land condition and water quality data
- Conduct systematic one-on-one outreach to meet with landowners, assess land conditions, and offer voluntary technical assistance
- Compile updated available water quality data and quantify changes from the baseline
- Evaluate and discuss program effectiveness at the next biennial review of the Area Plan

ODA Response:

3. If applicable, is the Watershed Approach Action Plan addressed?

Applicable to Coos-Coquille?

DEQ Comment: This document is consistent with the South Coast Basin WA.

ODA Response:

4. Does the Area Plan provide sound evidence or reasons why implementation actions could lead to pollution reduction? If some of the implementation actions are not consistent with TMDL and other WQ goals, explain why those practices do not contribute toward meeting those WQ goals.

Ch. 2.5 (p. 42-53) Prevention and control measures
Ch 3.3 (p. 55)
Appendix E and J

DEQ Comment: Suggested focus area measurable objectives.

Priority Areas

A priority area is a relatively small area within the Management Area that is identified jointly by ODA, LMAs, the LAC, and other partners. Outreach and technical assistance is focused in these areas, and every landowner with potential land condition concerns is contacted with an offer of voluntary assistance. ODA and the LMA measure, evaluate, and document effectiveness of the Area Plan by assessing changes in land conditions in the priority area at the next biennial review of the Area Plan.

To measure baseline and post-implementation land conditions in the priority area, ODA and/or the LMA will estimate and map the land condition along stream segments, using broad categories that may also be depicted using color coding. For streamside vegetation, the partners will measure the percentages of streamside agricultural lands in the priority area that:

- meet the goals of the Area Plan, with site-capable vegetation present
- are improving in condition, but not at site capability
- have agricultural practices that prevent vegetation from establishing
- Ensure that streamside vegetation provides streambank stability, filtration of overland flow, and moderation of solar heating, consistent with site capability
- Eliminate visible sediment loss from cropland through precipitation or irrigation-induced erosion
- Eliminate significant bare areas (near streams, on pasturelands, and on rangelands) that may contribute waste to waters of the state

- Ensure that active gullies (near streams, on pasturelands, and on rangelands) have healed or do not exist where they may contribute waste to waters of the state
- Ensure that livestock manure is stored in a manner and location such that it cannot contribute waste to waters of the state

ODA Response:

5. Does the Area Plan include timelines, schedules, and measurable milestones that are consistent with the TMDL WQMP?

Ch 3.3 (p. 55)

Please consider language in #2 applied to the Tenmile Watershed.

DEQ believes that area plans should have the following milestones, and recommend ODA to include them in the area plan.

- Define/explain how to determine rule compliance by describing prohibited conditions in detail.
- Obtain status percent compliance with rule within Plan area by a specific date.
- Interim milestones and timeline to achieve 100% rule compliance for each area rule.
- Develop monitoring and evaluation strategy that will allow ODA to assess plan and rule effectiveness.

Interim Milestones and timeline for adopting practices in the Plan

ODA Response:

6. Is monitoring adequate to determine whether progress is being made to achieve the goals of the plan? If no, are monitoring needs identified and is there a strategy to meet those needs?

3.3.4 (p. 59-60) Beth is working to compile monitoring summary table. Ch. 4 (p. 63)

DEQ Comment: **I can't answer this fully until I see the monitoring summary.**

DEQ recommends ODA and LAC to include strategies and milestones to ensure monitoring is adequate to determine whether progress is made to achieve the goals and objectives of the plan. DEQ recommends ODA and LAC to do so by identifying monitoring questions that they want to answer in order to evaluate progress toward meeting WQS. The monitoring section at a minimum should include questions specified in the MOA.

Please consider adding the following

Statewide monitoring and evaluation of water quality and streamside conditions on agricultural lands

ODA conducts monitoring at a statewide level and analyzes other agencies' and organizations' monitoring data to answer several monitoring questions related to agriculture and water quality.

- What are current water quality and landscape conditions in agricultural areas in Oregon?
- What are water quality trends?
- How well does the existing monitoring network assess agricultural water quality trends and streamside conditions in Oregon?
- What are riparian vegetation trends along agricultural lands in Oregon?
- How do riparian conditions compare with site capabilities?
- How do riparian vegetation conditions change in aerial photos of selected stream reaches?
- How do changes in riparian vegetation condition compare with trends in water quality in monitored watersheds?

To answer these questions, ODA evaluates water quality data from existing sites in DEQ's LASAR database (http://deq12.deq.state.or.us/lasar2) that reflect agricultural influence on water quality. The LASAR database is being phased out and the database reference should be updated in the next biennial review.

In 2011, ODA received funding from the Oregon Legislature to fund water quality sampling at 19 additional sites around Oregon. These data, once sampling begins, will also be published in the LASAR database and evaluated at the statewide level to determine trends in water quality at agricultural sites statewide. (See "water quality data assessment" below.)

In addition, ODA evaluates aerial photos of stream segments in each management area that are selected at random along agricultural lands. Based on the streamside vegetation present at the time of the assessment, each stream segment receives a score. The same stream segments are re-photographed and re-scored every five years to track changes in streamside vegetation conditions. By itself, a score does not tell whether streamside vegetation is in good or poor condition. A score provides some idea of the mixture of bare ground, grasses, shrubs, and trees present at a site, but it does not compare the vegetation that is there with the types of vegetation that can be expected given the site capability. In the Coos Coquille Management Area, monitored stream segments are located **STATE WHERE**. Data were first collected in these watersheds in XXXX, and the second round of data collection occurred in XXXX. (Consider adding "Streamside vegetation assessments" section.)

Water quality data assessment

For each Management Area, ODA currently evaluates other agencies' and organizations' water quality data to answer the following questions.

- What water quality and land condition data from agricultural watersheds are available?
- What are trends in available water quality and land condition data in agricultural watersheds since Area Plan and Rule adoption?
- What is the status of water quality in the management area since the last biennial review?

The Oregon DEQ uses the Oregon Water Quality Index to characterize water quality at its long-term monitoring sites. The index analyzes water quality variables and produces a score describing general water quality. The index is unitless, with scores ranging from 10 (very poor) to 100 (excellent). The OWQI trend analysis assesses changes in general water quality, specifically those parameters included in the OWQI. Changes in toxics concentrations, habitat, or biology are not considered. Some parameters assessed in the OWQI may be subject to diel fluctuations and are sensitive to time of day sampling. These parameters include temperature, dissolved oxygen, pH, and nutrients. Temporally intensive monitoring has been conducted in many areas in order to better understand these parameters. The OWQI trend analysis also does not consider variations in meteorological or hydrological conditions, variations in sample time of day, or for tidal stage. Because of these unaccounted for variables use of the OWQI must be done carefully and within the context of the analyses.

DEQ reviewed water quality data collected between 2004 and 2013 for five sites in Coos County. Each of these sites appears to have some agricultural influence. The sites include the North Fork Coquille River @ Highway 42, Middle Fork Coquille River @ Hoffman Wayside, South Fork Coquille River @ Broadbent, Coos River at Rooke Higgins Boat Ramp, and the South Fork Coos River at Anson Rogers Bridge.

Coos River at Rooke Higgins Boat Ramp and the South Fork Coos River at Anson Rogers Bridge are subject to tidal influences although generally dominated by fresh water flows during the period January through May. Estuarine conditions prevail during the drier months usually beginning in June and continuing through October with specific conductivities greater than 200 μmhos upward to salinities ranging as high as twenty parts/thousand. Conditions in November are variable indicative of episodic estuarine conditions with periods of fresh water dominance. Both the freshwater and estuarine water quality standards are attained throughout most of the period of record although dissolved oxygen levels below the estuarine criteria have been recorded in July and September. No spawning occurs at these sites because of tidal influences and substrate. The OWQI now flags these sites as being subject to tidal influences and periodically saline. Because the Oregon Water Quality Index (OWQI) utilizes only the fresh water criterion the index value at these

sites is negatively impacted during periods of marine influence. At these locations estuarine criteria should be applied when a measurable marine influence is present. These two sites have index values of **poor and very poor** which may be somewhat misleading.

The North Fork of the Coquille River at Hwy 42 is also subject to tidal influences which lead to fresh water backwatering on a daily basis. The Coquille River mainstem begins at the North and South Forks confluence. When the tide is out, samples collected at this ambient site represent water quality conditions for the North Fork. When tides are in, samples collected at the North Fork ambient site can represent a combination of water quality conditions (North and South Forks as well as contributions from the mainstem). Conductivities are higher in the mainstem Coquille River and can be utilized as a mechanism to discern between results which represent backwater and conditions that represent the North Fork Coquille River. Caution should be used when evaluating this data to assure that backwater water quality conditions are not solely attributed to the North Fork.

Coquille River Mainstem @ Sturdevant Park is also subject to tidal backwatering. This site is tidally influenced which leads to fresh water backwatering on a daily basis. In addition, both the City of Coquille WWTP and the Roseburg Forest Products log pond discharge to this area and may influence water quality measurements at this ambient site.

Tidal backwatering complicates the interpretation of these water quality data sets. Because the stream is not free flowing (water moves both upstream and downstream at these locations) residence time is extended. Because sampling occurs regardless of tidal stage unaccounted for variables are introduced into trend analyses. Caution should be used when evaluating this data to assure that backwater conditions are accounted for.

Oregon Water Quality Index Results 2004-2013			
Site	**OWQI (sub-index score)**	**OWQI Condition and (trend)**	**WQ Parameters with Poor or Very Poor Sub Index Scores**
Middle Fork Coquille River @ Hoffman Wayside	86	Good (Improving)	Total Solids
South Fork Coquille River @ Broadbent	84	Fair	Temperature, Total Solids
North Fork Coquille River @ Highway 42	85	Good	Total Solids
Coquille River @ Sturdevant Park	82	Fair	Temperature, Total Solids
Millicoma River @ Rooke Higgins Boat Ramp	57	Very Poor	Dissolved Oxygen, Total Solids
South Fork Coos River @ Anson Rogers Bridge	47	Very Poor	Temperature. Dissolved Oxygen, Total Solids

Land condition assessment

Land conditions can serve as useful surrogates (indicators) for water quality parameters. For example, streamside vegetation is generally used as a surrogate for water temperature, because shade blocks solar radiation from warming the stream. Sediment can be used as a surrogate for pesticides or mercury, and livestock access to waterways can be used as a surrogate for bacteria.

The Ag Water Quality Program focuses on land conditions, in addition to water quality data, for several reasons:

- landowners can see land conditions and have direct control over land conditions
- it is difficult to separate agriculture's influence on water quality from other land uses
- it requires extensive monitoring of water quality to evaluate progress which is both expensive and may still fail to demonstrate improvements
- improved land conditions can be documented immediately, but there may be a significant lag time before water quality improves
- agricultural sources of water pollution are achieved primarily through improvements in land conditions

Water quality monitoring data also helps ODA and partners to evaluate the effects of changing land conditions on water quality parameters such as temperature, bacteria, nutrients, sediment, and pesticides, and to measure progress in implementing the Area Plan.

ODA is planning to work with LMAs to conduct land condition assessments at the management area level. These assessments will allow ODA and partners to track

improvements in land conditions over time. Often, improvements in land conditions are detectable much earlier than changes in water quality. For example, when a landowner restores a streamside area, land conditions improve rapidly, even though it may take 20 years for streamside vegetation to reach the height that can positively affect stream temperatures.

ODA will work with LMAs and other partners to design and conduct an assessment of streamside areas along agricultural lands in the management area prior to the next biennial review.

Implementation activities assessment
In addition, during the biennial review process, ODA, the LMA, and the LAC assess activities that have occurred to help achieve plan goals and objectives, including the following.

- Outreach and education activities conducted to promote awareness of water quality issues and encourage agricultural land conditions that protect water quality, and the level of participation in these activities
- Voluntary conservation projects installed by agricultural landowners and managers in cooperation with the LMA and other agencies and organizations
- Number of complaint investigations, the result of each complaint investigation, and corrections of violations

Effectiveness monitoring in small geographic areas
Many of ODA's current efforts are focused on evaluating program effectiveness in small geographic areas, such as small watersheds. ODA water quality staff work with LMAs to select a small area, based on land condition and water quality concerns. ODA and the LMAs develop action plans with identified milestones and corresponding timelines to improve streamside vegetation and/or other land conditions. A reporting mechanism is identified in the action plan, which includes assessments provided to LACs at their biennial reviews.

Small area assessments include:

- Baseline and two-year post-baseline conditions with respect to parameters of concern identified in the area.
- A report on the level of progress that was made in land condition changes through voluntary outreach, education, and technical assistance.
- Evaluation of changes in water quality in the area, if appropriate and if data are available.
- Implementation of a compliance assurance process to ensure compliance with applicable regulations.

Local Monitoring Efforts - ADD

ODA Response:

II. Implementation/evaluation

Beth – I will need to see the "Area Plan and Rules Effectiveness Evaluation" that will be presented to the LAC to answer questions A-C below.

A. Are voluntary efforts sufficient to implement the Area Plan or are additional incentives needed to increase the rate of participation?

Ch 4.1 (p. 63)

DEQ Comment: This question is not easily answered for most of the management plan area due to lack of specificity in area plans and available information. Once timelines are set to achieve 100% rule compliance, and methodology for obtaining that information becomes clear, ODA and LAC can determine if area plans are being implemented at a reasonable rate. ODA and LMAs are encouraged to identify and track data needed.

It is important for DEQ to obtain geographically organized implementation information ahead of biennial reviews in order to better comment on this question.

ODA Response:

B. Are milestones and timelines established for Area Plans achieving the goal of the Program?

Ch 3.3 (p. 55), Ch 4 (p 63), App. J

DEQ Comment: See above
ODA Response:

C. Is reasonable progress being made towards accomplishing milestones and timelines in the Area Plan?

Ch 3.3 (p. 55), Ch 4 (p 63), App. J

DEQ Comment: See above
ODA Response:

III. Area Rules

A. Are the prohibited conditions likely to be effective in making reasonable progress towards meeting state water quality goals?

Ch 2.5 (p 41-53) Rules are imbedded in Prevention and Control Measures. Also available as document separate from Plan.

DEQ Comment: DEQ recommends that roads on agricultural land be explicitly addressed in sufficient detail in the Rules by establishing performance standards and BMPs to achieve them. This objective can be accomplished either through (a) identification of minimum design and construction standards, maintenance and

BMPs (e.g., Oregon Forest Practices Act), or (b) alternatively, the Rules should contain a prohibited condition for roads on agricultural lands such as "minimize hydrological connection to waters of the state to the maximum extent practicable" or a similar standard that can be assessed by ODA for compliance. Area Rules are generally inconsistent in treatment of roads and should be standardized.

In general it is difficult to determine if the prohibited conditions are effective because it is not clear to DEQ how rule compliance at a site scale is determined. DEQ recommends ODA and LAC to provide sufficient detail in the rules document in order to clarify how one would determine rule compliance for each area rule.

DEQ understands the challenges associated with rulemaking, but recommends ODA and LAC to consider adding rules for erosion and/or manure management for the added benefits of clarifying the intended outcome of area rules.

In order to evaluate effectiveness of the rules, DEQ also recommends ODA and LAC to develop and implement effectiveness monitoring.

ODA Response:

B. Are additional prohibited conditions or other mandatory control measures needed?

DEQ Comment: The Coos Coquille LAC did a good job initially when they identified prohibited conditions. Prohibited conditions look good and are pretty inclusive. LAC should consider adding a prohibited condition that addresses roads.

ODA Response:

Table 1 - Coos Sub-basin 2010 303d Listing Requiring a TMDL			
Waterbody (Stream/Lake)	**River Miles**	**Parameter**	**Season**
Eel Creek	0 to 2.5	Biological Criteria	Year Round
Catching Creek	0 to 4.6		
Cedar Creek	0 to 11.6		
Johnson Creek	0 to 9.3		
Murphy Creek	0 to 3.9		
Unnamed Stream	0 to 1.8		
Williams River	0 to 16.2		
Winchester Creek	0 to 5.4		
Tenmile and North Tenmile Lakes	0 to 4.5	chlorophyll a	Summer
Isthmus Slough	0 to 10.6	Dissolved Oxygen	June 1 - September 30
Millicoma River	0 to 8.9		October 1 - May 31
South Fork Coos River	0 to 2.6		Year Around
Kentuck Slough	0 to 2.2		May 16 - Dec 31
Kentuck Slough	0 to 2.2		Jan 1 - May 15
Millicoma River	0 to 8.9		Year Round
Noble Creek	0 to 3.6	pH	Fall-Winter-Spring
Tenmile Lake	0 to 5		Summer
Sunset Beach	NA	Enterococcus (Recreational Contact)	Year Around
Bastendorff Beach			Summer
Catching Creek	0 to 11.2	*e. Coli*	Fall-Winter-Spring
Kentuck Slough	0 to 2.2		
Mettman Creek	0 to 3.5		
Stock Slough	0 to 1.1		
Pony Creek	0 to 5.8		
Catching Creek	0 to 4.6		Summer
Catching Creek	0 to 11.2		
Larson Slough	0 to 3.9		
Pony Creek	0 to 5.8		
Ross Slough	0 to 3.1		
South Slough	0 to 5.3		
Stock Slough	0 to 1.1		
Catching Slough	0 to 5.6	Fecal Coliform (Recreational Contact)	Fall-Winter-Spring
Haynes Inlet	0 to 3.3		
Kentuck Slough	0 to 2.2		
Larson Slough	0 to 3.9		Year Around
Pony Creek	0 to 5.8		Fall-Winter-Spring
Stock Slough	0 to 1.1		Year Around
Willanch Slough	0.7 to 2.8		

Table 1 - Coos Sub-basin 2010 303d Listing Requiring a TMDL			
Waterbody (Stream/Lake)	**River Miles**	**Parameter**	**Season**
Coalbank Slough	0.5 to 2.5	Fecal Coliform (Shellfish Growing)	Year Round
Cooston Channel	0 to 3		
Davis Slough	0 to 1.3		
Day Inlet	0 to 0.6		
Larson Creek	0 to 4.1		
Mettman Creek	0 to 3.5		
Noble Creek	0 to 3.6		
Sullivan Creek	0 to 3.3		
North Slough	0 to 2.4		Year Around
Catching Creek	0 to 4.6		
Catching Slough	0 to 5.6		
Coalbank Slough	0 to 0.5		
Coos Bay	0 to 7.8		
Coos Bay	7.8 to 12.3		
Coos River	0 to 6.5		
Echo Creek	0 to 2.5		
Haynes Inlet	0 to 3.3		
Isthmus Slough	0 to 10.6		
Joe Ney Slough	0 to 2.2		
Kentuck Slough	0 to 2.2		
Larson Slough	0 to 3.9		
Millicoma River	0 to 8.9		
North Inlet	0 to 3.3		
Palouse Creek	0 to 10.5		
Pony Creek	0 to 5.8		
Pony Slough	0 to 0.8		
Ross Slough	0 to 3.1		
Shinglehouse Slough	0 to 0.8		
South Fork Coos River	0 to 31.1		
South Slough	0 to 5.3		
Stock Slough	0 to 1.1		
Willanch Creek	0 to 3.9		
Winchester Creek	0 to 5.4		
Elk Creek	0 to 8.7	Iron	Year Around
Isthmus Slough	0 to 10.6	Manganese	Year Around
Cedar Creek	0 to 11.6	Temperature	Year Around (Non-spawning)
Williams River	0 to 20.9		
Fiddle Creek	0 to 13.4		
Burnt Creek	0 to 2.6		
Tioga Creek	0 to 17.5		

Table 1 - Coos Sub-basin 2010 303d Listing Requiring a TMDL			
Waterbody (Stream/Lake)	**River Miles**	**Parameter**	**Season**
Arrow Creek	0 to 4.3		
Bottom Creek	0 to 9.7		
Daniels Creek	0 to 7.7		
Deer Creek	0 to 4		
Deton Creek	0 to 2.4		
Elk Creek	0 to 8.7		
Fall Creek	0 to 7.7		
Hog Ranch Creek	0 to 2.2		
Kelly Creek	0 to 1.4		
Kentuck Creek	0 to 3.4		
Mettman Creek	0 to 3.5		
Morgan Creek	0 to 4.6		
North Slough	0 to 6.1		
Packard Creek	0 to 2.3		
Palouse Creek	0 to 10.5		
Panther Creek	0 to 2.4		
South Fork Coos River	0 to 31.1		
Sullivan Creek	0 to 3.3		
West Fork Millicoma River	0 to 34.8		
Wilson Creek	0 to 6.6		
Bessey Creek	0 to 2.4		
Catching Creek	1.4 to 4.6		
Coalbank Slough	2.4 to 2.5		
Eel Creek	0 to 2.5		
Larson Creek	0 to 4.1		
Larson Slough	0.2 to 3.9		
Mart Davis Creek	0 to 2.9		
Noble Creek	0 to 3.6		
Pony Creek	0 to 5.8		
Ross Slough	0 to 5.2		
Stock Slough	0 to 2.3		
Willanch Slough	0.7 to 2.8		
Tioga Creek	0 to 16.2		October 15 – May 15

Table 2 – Coquille Sub-Basin 2010 303d Listings Requiring a TMDL			
Waterbody (Stream/Lake)	**River Mile**	**Parameter**	**Season**
Sru Lake	0 to 0	Aquatic Weeds Or Algae	Undefined
Bill Creek	0 to 7.7	Biological Criteria	Year Round
Hudson Creek	0 to 6.3		
Johns Creek	0 to 2.5		
Lake Creek	0 to 0.9		
Mill Creek	0 to 2		
Myrtle Creek	0 to 17		
North Fork Coquille River	0 to 48.6		
South Fork Coquille River	0 to 51.9		
South Fork Coquille River	53.4 to 61.9		
Steel Creek	0 to 4.9		
Ward Creek	0 to 3.3		
Coquille River	4.2 to 35.6	Chlorophyll a	Summer
Hall Creek	0 to 9	Dissolved Oxygen	May 16 - Dec 31
Middle Fork Coquille River	0 to 39.6		Jun 16 - Dec 31
Mill Creek	0 to 2		May 16 - Dec 31
Reed Creek	0 to 3.4		Jun 16 - Dec 31
Bear Creek	0 to 13.2	Dissolved Oxygen	Fall-Winter-Spring
Coquille River	0 to 35.6		January 1 - May 15
North Fork Coquille River	0 to 18.5		
Middle Fork Coquille River	0 to 11.2		October 15 - May 15
South Fork Coquille River	4.7 to 18.1		
Cunningham Creek	0 to 7.4		Year Around
Middle Fork Coquille River	0 to 11.2		Year Around (Non-spawning)
North Fork Coquille River	0 to 27.9		
South Fork Coquille River	0 to 18.1		
Bear Creek	0 to 13.2	Fecal Coliform Recreational Contact	Fall-Winter-Spring
Coquille River	4.2 to 35.6		
Cunningham Creek	0 to 7.4		

Table 2 – Coquille Sub-Basin 2010 303d Listings Requiring a TMDL			
Waterbody (Stream/Lake)	**River Mile**	**Parameter**	**Season**
Cunningham Creek	0 to 7.4		Summer
Bear Creek	0 to 13.2	*e. Coli*	Fall-Winter-Spring
Calloway Creek	0 to 1.9		
Coquille River	4.2 to 35.6		
Cunningham Creek	0 to 7.4		
Lampa Creek	0 to 5.7		
Middle Fork Coquille River	0 to 39.6		
North Fork Coquille River	0 to 19		
Reed Creek	0 to 2.5		
South Fork Coquille River	0 to 18.9		
Calloway Creek	0 to 1.9		Summer
Cunningham Creek	0 to 7.4		
Hall Creek	0 to 9		
Lampa Creek	0 to 5.7		
Middle Fork Coquille River	0 to 39.6		
North Fork Coquille River	0 to 19		
Reed Creek	0 to 2.5		
North Fork Coquille River	0 to 19	Fecal Coliform	Year Round
Bear Creek	0 to 13.2	Fecal Coliform Shellfish Growing	Year Around
Coquille River	0 to 4.2		
Coquille River	4.2 to 35.6		
Ferry Creek	0 to 3.6		
Fishtrap Creek	0 to 4.7	Iron	
Baker Creek	0 to 2.9	Temperature	Summer
Belieu Creek	0 to 3.1		
Coquille River	21 to 35.3		
East Fork Coquille River	0 to 26.2		
Rowland Creek	0 to 4.6		
Salmon Creek	0 to 9.2		
Unnamed1	0 to 3.6		
Woodward Creek	0 to 7.6		

Table 2 – Coquille Sub-Basin 2010 303d Listings Requiring a TMDL			
Waterbody (Stream/Lake)	**River Mile**	**Parameter**	**Season**
Alder Creek	0 to 3.1		Year Around Non Spawning
Battle Creek	0 to 1.5		
Bingham Creek	0 to 2		
Boulder Creek	0 to 4.1		
Dice Creek	0 to 4.2		
Elk Creek	0 to 5.7		
Middle Creek	0 to 24.2		
Middle Fork Coquille River	11.2 to 39.6		
Moon Creek	0 to 4.7		
North Fork Coquille River	0 to 27.9		
North Fork Coquille River	27.9 to 52.3		
Rock Creek	0 to 11.5		
South Fork Coquille River	18.1 to 61.9		
Twelvemile Creek	0 to 10.2		
Bear Creek	0 to 13.2		
Hatchet Slough	0 to 3.5		
Middle Fork Coquille River	0 to 11.2		
South Fork Coquille River	0 to 18.1		
Catching Creek	0 to 11.1		
Hall Creek	0 to 9		
Jim Belieu Creek	0 to 3.7		
Lampa Creek	0 to 5.7		
Reed Creek	0 to 3.4		
Middle Fork Coquille River	0 to 11.1		Oct 15 - May 15
Middle Fork Coquille River	11.1 to 19.6		Sep 15 - Jun 15
South Fork Coquille River	18.1 to 47.1		Sep 15 - Jun 15
Hatchet Slough	0 to 1.8		Oct 15 - May 15